

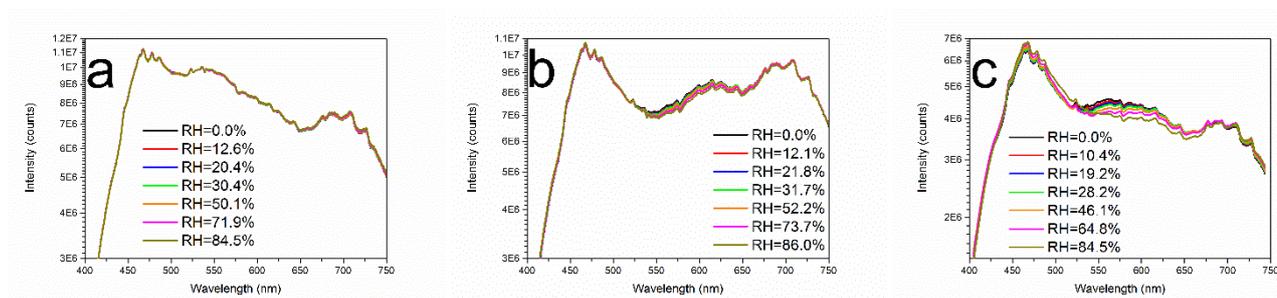
# Supplementary Information

## High-responsive optical humidity sensor based on self-assembled gold nanoparticles covered with Nafion

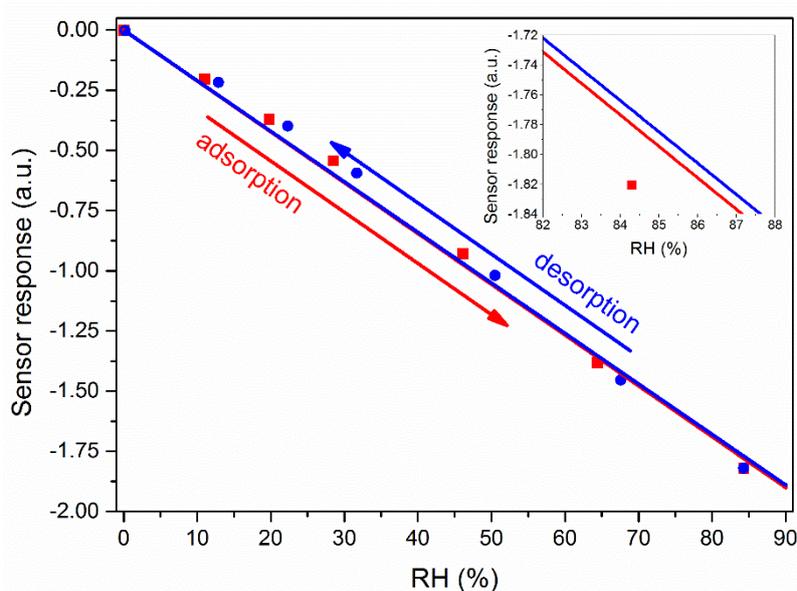
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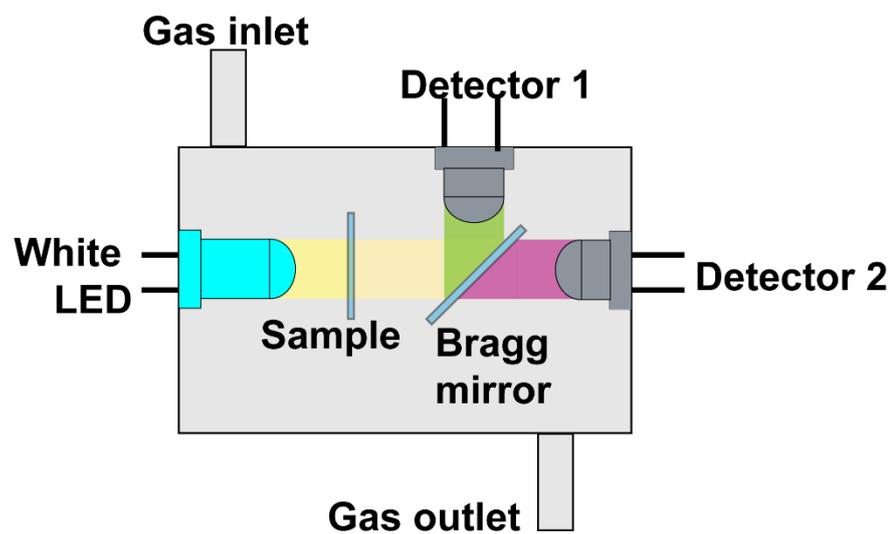
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**Figure S1.** Transmitted light spectra measured at different relative humidity in nitrogen atmosphere for Nafion film thickness 130 nm (a), 190 nm (b), and 300 nm (c). The spectra were used to calculate the sensor response.



**Figure S2.** Response of sample C 2 months stored in ambient conditions to RH from dry to humidified nitrogen (red squares), and in reverse direction (blue circles). Lines represent linear fitting of the corresponding experimental points.



**Figure S3.** Scheme of the proposed optical humidity sensor based on LSPR of self-assembled gold nanoparticles covered with Nafion thin film.